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(54) Container with cover sealing and locking system

(57) A container 11 is provided with a resiliently deformable seal member 13 which envelopes a beaded edge 12 of the container 11 and also fulfils the sealing function in a double cover system, a bottom surface of a shoulder 17 of the seal member 13 may comprise a support surface for a locking element 16 of a cover 14 of the container 11. The seal member 13 includes a cavity 15 for enhancing its elasticity and is secured to the container by adhesive material. The container may include a bead in its side wall against which the locking element 16 may engage (Figure 2). The container 11 may be urged directly against the bottom region of a cover 19 of a dispensing container 18 for contamination free transfer of the contents, eg radioactive or toxic material, from container 18 into container 11.

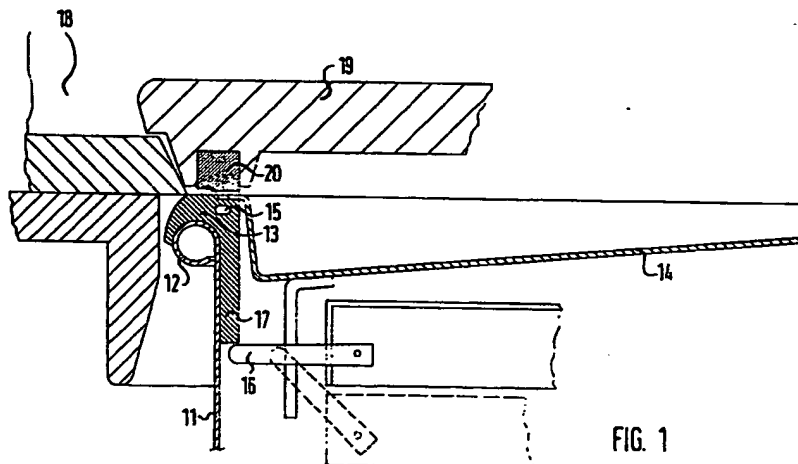
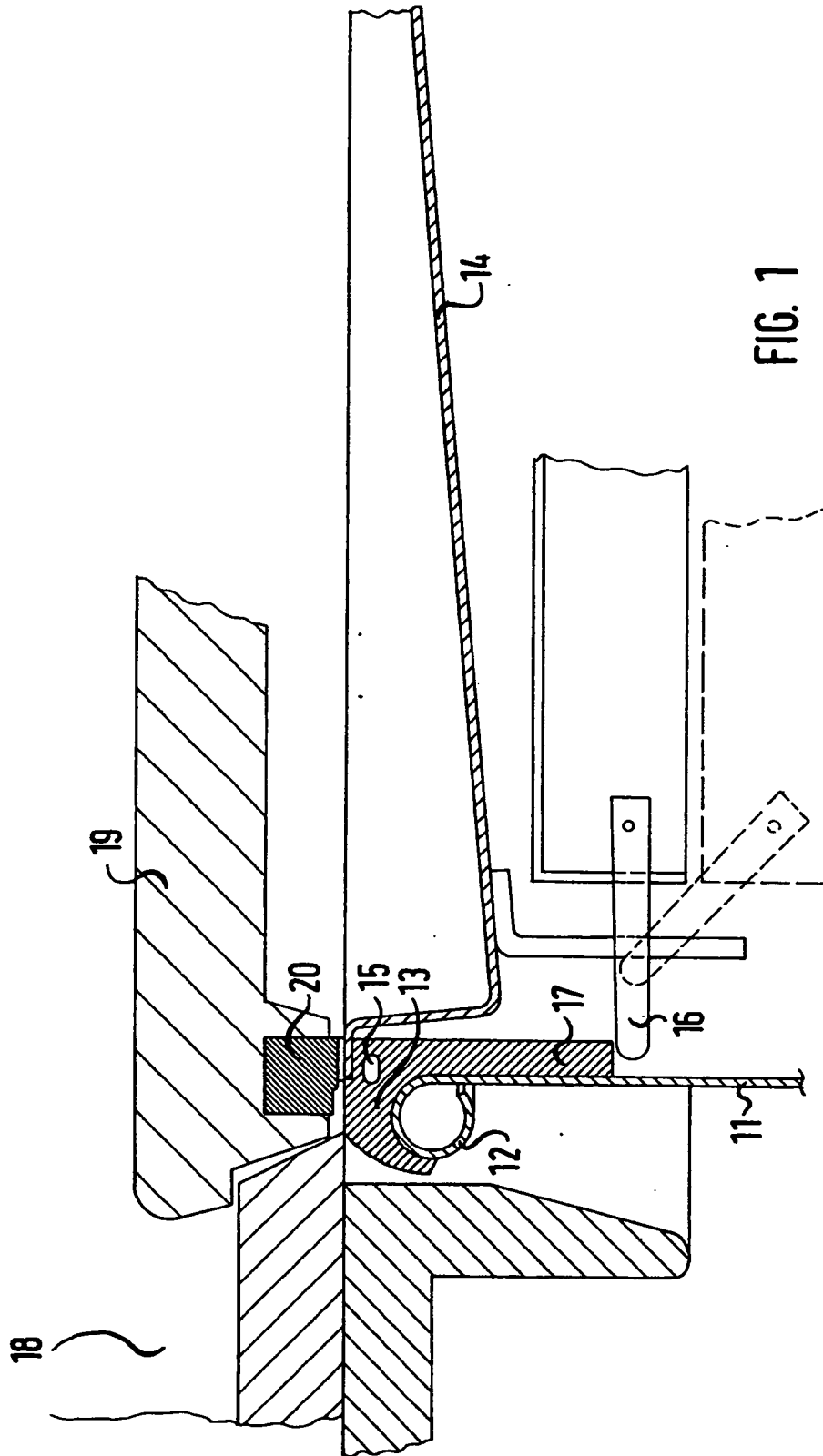


FIG. 1

1/2



2/2

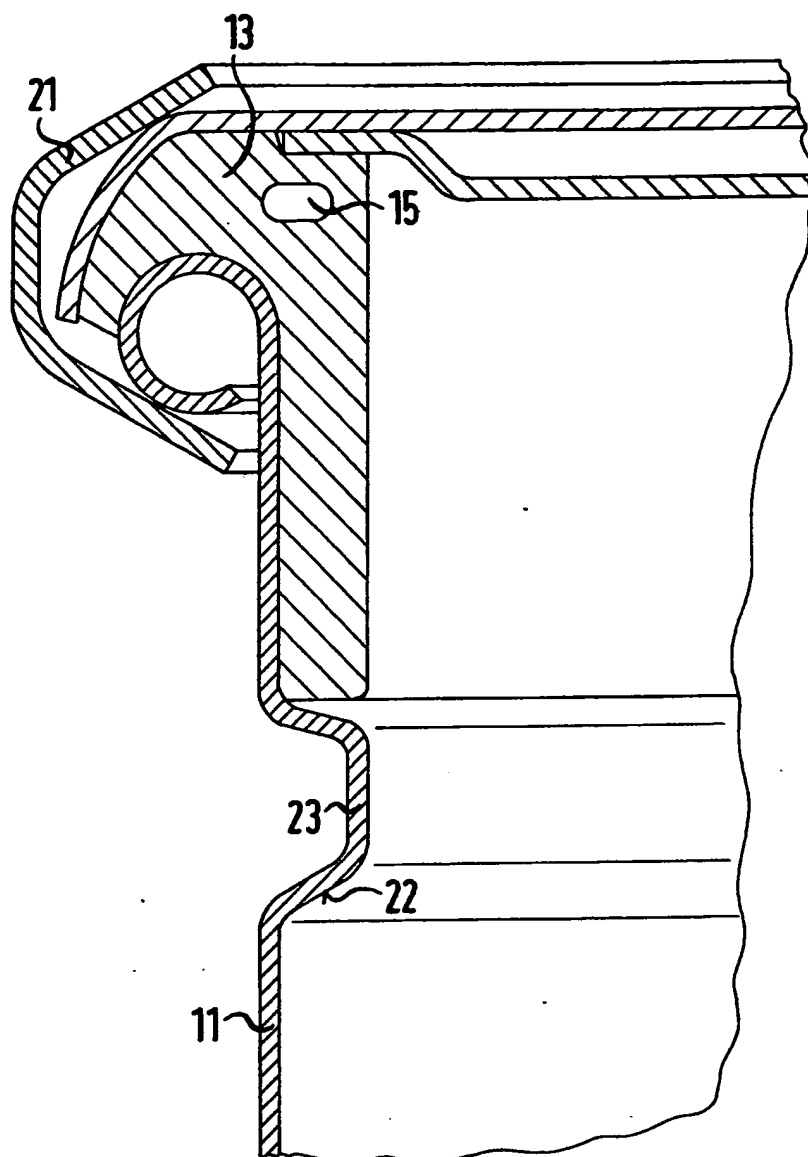


FIG. 2

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CONTAINER WITH COVER SEALING AND LOCKING SYSTEM

The present invention relates to a barrel, vat or  
10 other such container incorporating a cover  
locking/sealing system for a double cover system.

Primarily such a container is for use with toxic  
or radioactive waste and has a resiliently deformable  
seal located for sealing engagement with the cover. A  
15 cavity is located at the central region of a smaller  
inner sealing surface of the seal of the container  
cover when the container is in an upright position,  
which seal also has an outer sealing surface for  
sealing engagement with the cover of a transfer  
20 container. Decanting and filtrating radioactive or  
toxic material from a container or other vessel without  
causing contamination is a problem frequently  
encountered in the nuclear and chemical industries.  
The present invention seeks to provide a solution to  
25 this problem.

So called double cover systems are currently used  
for decanting or filtrating product from barrels, vats  
or other such containers, and such use is described in  
German patent 3425979 and published German patent  
30 application 2540722. The system used in most cases has  
the disadvantage that a flange on the container and a  
reinforcement seal are required for the provision of  
the container's seal joint. For this reason, it is not  
possible to use containers which only have a beaded  
35 edge and which are normally sealed off with a clamping

ring seal. The known system requires a bead in the container wall beneath the flange, which is not always available on containers with a flanged seal. Known containers having a flange are disadvantageously  
5 expensive.

Thus, the present invention seeks to provide a container having a cover locking and sealing system, which can comprise low priced components otherwise used in the packing industry and which can additionally be  
10 fitted with a double cover system to provide for safety and reliability when used with toxic and radioactive products.

According to the present invention there is provided a container for use with a double cover  
15 system, the container including a resiliently deformable peripheral seal member at least partially enveloping a flanged rim of the container and having an inner sealing surface for abutment with the cover, under which inner sealing surface there is provided at  
20 least one cavity in the seal member, the seal member also having an outer sealing surface for abutment at the periphery of an opening of another container.

Preferably, substantially all of the inner sealing surface is located inwardly of the region of the  
25 container located at the transition section to the flanged rim. Further, the seal member may be fixedly secured to the container by adhesive means.

Advantageously, the seal member includes a shoulder portion which may abut the inside of the  
30 container.

The invention is described further hereinafter, by way of example only with reference to the drawings in which:

Fig. 1 is a sectional part view of a container  
35 embodying the present invention; and

Fig. 2 is a sectional part view of an other container embodying the present invention.

Figs 1 and 2 show two embodiments of the present invention. In Fig. 1 the upper region of a container 5 11 is illustrated, which upper region includes a flanged edge 12. A seal ring member 13 is sleeved around the flanged edge 12. A cover 14 for the barrel 11 covers only the inner circumferential region of the seal member 13, which region includes a cavity 15 for 10 enhancing the elasticity of the seal 13. A locking element 16 is connected to the cover 14 of the container 11 and engages under the bottom surface of a shoulder 17 of the sealing ring member 13, so as to sealingly secure the cover 14 to the container 11. The 15 shoulder 17 extends along the inside of the container 11 and is formed while pre-stressed. In Fig. 1 the container 11 is urged directly against the bottom region of a cover 19 of a dispensing container 18, to ensure a contamination free transfer of the contents of 20 the dispensing container 18 into the container 11. The opening of the cover 14 of the container 11 and its attachment to the cover 19 is established in the same manner and by the same means as described in German patent 3542979 and published German patent application 25 2540722.

The cover 19 of the dispensing container 18 has a circumferential seal 20 against which the cover 14 of the container 11 is pressed. The cover 14 of the container 11 and the cover 19 are moved slightly 30 upwards in this compressed condition, ie as a single unit, thus causing the dispensing container 18 to open slightly, such that the product is able to flow therefrom and into the container 11. Although the cover 19 of the container 18 and the cover 14 of the 35 container 11 are now on the inside of the contaminated

dispensing container 18, their usually external surfaces will subsequently not be contaminated by the flow of the material into the container 11, since they are hermetically covered and sealed against each other  
5 by way of the engagement between the circumferential seal 20 and the circumferential region of the cover 14.

The cover 14 of the container 11 and the cover 19 of the dispensing container 18 are lowered as one unit, when the container 11 is to be sealingly locked. The  
10 cover 19 seals off the container 18 and the cover 14 seals off the container 11. The cover 14 of the container 11 is then locked by means of a locking element 16 and the container 11 can be moved away from the container 18.

15 With reference to Fig. 2, the container 11 is sealed off by way of a clamping ring 21 (not shown in Fig. 2) which surrounds the flanged edge 12. In contrast to the container illustrated in Fig. 1, which has a locking element 16 engaging a bottom surface of  
20 the shoulder 17 of the ring seal 13, locking element 16 engages the bottom surface 22 of a bead 23 formed in a wall of the container 11. The container 11 of Fig. 2 is therefore advantageous if a bead 23 is available in the wall of the container for reasons of providing  
25 strength and rigidity to the container 11 or otherwise.

CLAIMS

1. A container for use with a double cover system,  
5 the container including a resiliently deformable peripheral seal member at least partially enveloping a flanged rim of the container and having an inner sealing surface for abutment with the cover, under which inner sealing surface there is provided at least  
10 one cavity in the seal member, the seal member also having an outer sealing surface for abutment at the periphery of an opening of another container.
2. A container as claimed in claim 1, wherein substantially all of the inner sealing surface is  
15 located inwardly of the transition section of the container to the flanged rim.
3. A container as claimed in claim 1 or 2, wherein the seal member is fixedly secured to the container by means of adhesive material.
- 20 4. A container as claimed in claim 1, 2 or 3, wherein the seal member includes a shoulder portion abutting an inside surface of the container.
5. A container as claimed in claim 4, wherein the shoulder portion is disposed against the inside of the  
25 container while pre-stressed.
6. A container as claimed in claim 4 or 5, wherein an underside of the shoulder, with the container in an upright position, abuts against a shoulder of an inwardly extending bead formed in a side of the  
30 container.
7. A container as claimed in any one of claims 4-6, wherein a locking element of a cover of the container engages the shoulder when the cover of the container is closed.
- 35 8. A container as claimed in any preceding claim,



wherein the seal member envelopes the flanged rim to the outer edge region thereof.

9. A container for use with a double cover system, the container being substantially hereinbefore  
5 described with reference to and as illustrated in Fig. 1 and Fig. 2 of the drawings.